

ABSTRACT

The charging voltage measuring device includes a measuring electrode for forming an electrostatic capacity C_s with a substrate disposed on a substrate holding unit, a measuring capacitor, which has an electrostatic capacity C_m , being connected between the measuring electrode and a ground potential portion, and, a voltage measuring unit for measuring a measuring voltage V_m across the measuring capacitor, and a calculating unit. The calculating unit 22 calculates the charging voltage V_s on the surface of the substrate at time t_1 in accordance with the following numerical expression on the basis of the measuring voltage $V_m(t_1)$ at time t_1 , an inverse K of a voltage dividing ratio and a resistance value R_m of a resistor disposed in parallel to the measuring capacitor 18, when the measurement time is t_1 .

$$V_s = K[V_m(t_1) + \{1/(C_m R_m)\} \int_0^{t_1} V_m(t) dt]$$

where $K = (C_s + C_m)/C_s$ or $K = C_m/C_s$ (if $C_m \gg C_s$)